Amendments to the Specification:

Please amend paragraphs [001], [002], [003] and [004] and [028] of the specification as follows:

[01] The present application is related to commonly owned (and filed on even date) United States Patent Applications: (1) United States Patent Publication No. 2005/0083345 ('the '345 application) [United States Patent Application Serial No. 10/691,200] entitled "HUE ANGLE CALCULATION SYSTEM AND METHODS"; (2) United States Patent Publication No. 2005/0083341 ('the '341 application) [United States Patent Application Serial No. 10/691,377]entitled "METHOD AND APPARATUS FOR CONVERTING FROM SOURCE COLOR SPACE TO RGBW TARGET CENTER SPACE"; (3) United States Patent Publication No. 2005/0083352 ('the '352 application) [United States Patent Application Serial No. 10/691,396] entitled "METHOD AND APPARATUS FOR CONVERTING FROM A SOURCE COLOR SPACE TO A TARGET COLOR SPACE", which are hereby incorporated herein by reference.

[02] In commonly owned United States Patent Applications: (1) United States Patent Publication No. 2002/0015110 ('the '110 application) [United States Patent Application Serial No. 09/916,232] ~~("the '232 application")~~, entitled "ARRANGEMENT OF COLOR PIXELS FOR FULL COLOR IMAGING DEVICES WITH SIMPLIFIED ADDRESSING," filed July 25, 2001; (2) United States Patent Publication No. 2003/0128225 ('the '225 application) [United States Patent Application Serial No.

10/278,353] ~~("the '353 application")~~, entitled "IMPROVEMENTS TO COLOR FLAT PANEL DISPLAY SUB-PIXEL ARRANGEMENTS AND LAYOUTS FOR SUB-PIXEL RENDERING WITH INCREASED MODULATION TRANSFER FUNCTION RESPONSE," filed October 22, 2002; (3) United States Patent Publication No. 2003/0128179 ('the '179 application) [United States Patent Application Serial No. 10/278,352] ~~("the '352 application")~~, entitled "IMPROVEMENTS TO COLOR FLAT PANEL DISPLAY SUB-PIXEL ARRANGEMENTS AND LAYOUTS FOR SUB-PIXEL RENDERING WITH SPLIT BLUE SUB-PIXELS," filed October 22, 2002; (4) United States Patent Publication No. 2004/0051724 ('the '724 application) [United States Patent Application Serial No. 10/243,094] ~~("the '094 application")~~, entitled "IMPROVED FOUR COLOR ARRANGEMENTS AND EMITTERS FOR SUB-PIXEL RENDERING," filed September 13, 2002; (5) United States Patent Publication No. 2003/0117423 ('the '423 application) [United States Patent Application Serial No. 10/278,328] ~~("the '328 application")~~, entitled "IMPROVEMENTS TO COLOR FLAT PANEL DISPLAY SUB-PIXEL ARRANGEMENTS AND LAYOUTS WITH REDUCED BLUE LUMINANCE WELL VISIBILITY," filed October 22, 2002; (6) United States Patent Publication No. 2003/0090581 ('the '581 application) [United States Patent Application Serial No. 10/278,393] ~~("the '393 application")~~, entitled "COLOR DISPLAY HAVING HORIZONTAL SUB-PIXEL ARRANGEMENTS AND LAYOUTS," filed October 22, 2002; (7) United States Patent Publication No. 2004/0080479 ('the '479 application") [United States Patent Application Serial No. 010/347,001] ~~("the '001 application")~~ entitled "IMPROVED SUB-PIXEL ARRANGEMENTS FOR STRIPED DISPLAYS AND METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING SAME," filed January 16,

2003, novel sub-pixel arrangements are therein disclosed for improving the cost/performance curves for image display devices and herein incorporated by reference.

[03] For certain subpixel repeating groups having an even number of subpixels in a horizontal direction, the following systems and techniques to affect proper dot inversion schemes are disclosed and are herein incorporated by reference: (1) United States Patent Publication No. 2004/0246280 ('the '280 application) [United States Patent Application Serial Number 10/456,839] entitled "IMAGE DEGRADATION CORRECTION IN NOVEL LIQUID CRYSTAL DISPLAYS"; filed June 6, 2003, (2) United States Patent Publication No. 2004/0246213 ('the '213 application) [United States Patent Application Serial Number 10/455,925] entitled "DISPLAY PANEL HAVING CROSSOVER CONNECTIONS EFFECTING DOT INVERSION"; filed June 6, 2003, (3) United States Patent Publication No. 2004/0246381 ('the '381 application) [United States Patent Application Serial Number 10/455,931] entitled "SYSTEM AND METHOD OF PERFORMING DOT INVERSION WITH STANDARD DRIVERS AND BACKPLANE ON NOVEL DISPLAY PANEL LAYOUTS"; filed June 6, 2003, (4) United States Patent Publication No. 2004/0246278 ('the '278 application) [United States Patent Application Serial Number 10/455,927] entitled "SYSTEM AND METHOD FOR COMPENSATING FOR VISUAL EFFECTS UPON PANELS HAVING FIXED PATTERN NOISE WITH REDUCED QUANTIZATION ERROR"; filed June 6, 2003, (5) United States Patent Publication No. 2004/0246279 ('the '279 application) [United States Patent Application Serial Number 10/456,806] entitled "DOT INVERSION ON NOVEL

DISPLAY PANEL LAYOUTS WITH EXTRA DRIVERS"; and (6) United States Patent Publication No. 2004/0246404 ('the '404 application) [United States Patent Application Serial Number 10/456,838] entitled "LIQUID CRYSTAL DISPLAY BACKPLANE LAYOUTS AND ADDRESSING FOR NON-STANDARD SUBPIXEL ARRANGEMENTS". filed June 6, 2003.

[04] These improvements are particularly pronounced when coupled with sub-pixel rendering (SPR) systems and methods further disclosed in those applications and in commonly owned United States Patent Applications: (1) United States Patent Publication No. 2003/0034992 ('the '992 application) [United States Patent Application Serial Number 10/051,612] ~~("the '612 application")~~, entitled "CONVERSION OF A SUB-~~RGB~~ PIXEL FORMAT DATA TO ANOTHER ~~PENTILE MATRIX~~ SUB-PIXEL DATA FORMAT," filed January 16, 2002; (2) United States Patent Publication No. 2003/0103058 ('the '058 application) [United States Patent Application Serial Number 10/150,355] ~~("the '355 application")~~, entitled "METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING WITH GAMMA ADJUSTMENT," filed May 17, 2002; (3) United States Patent Publication No. 2003/0085906 ('the '906 application) [United States Patent Application Serial Number 10/215,843] ~~("the '843 application")~~, entitled "METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING WITH ADAPTIVE FILTERING," filed August 8, 2002; (4) United States Patent Publication No. 2004/0196302 ('the '302 application) [United States Patent Application Serial Number 10/379,767] entitled "SYSTEMS AND METHODS FOR TEMPORAL SUB-PIXEL RENDERING OF IMAGE DATA" filed March 4, 2003; (5) United States Patent

Publication No. 2004/0174380 ('the '380 application) [United States Patent Application Serial Number 10/379,765] entitled "SYSTEMS AND METHODS FOR MOTION ADAPTIVE FILTERING," filed March 4, 2003; (6) United States Patent Publication No. 2004/0174375 ('the '375 application) [United States Patent Application Serial Number 10/379,766] entitled "SUB-PIXEL RENDERING SYSTEM AND METHOD FOR IMPROVED DISPLAY VIEWING ANGLES" filed March 4, 2003; (7) United States Patent Publication No. 2004/0196297 ('the '297 application) [United States Patent Application Serial Number 10/409,413] entitled "IMAGE DATA SET WITH EMBEDDED PRE-SUBPIXEL RENDERED IMAGE" filed April 7, 2003, which are hereby incorporated herein by reference.

[028] Traversing these gamuts can be done in several ways. One way would be to generate one color in a perceptually uniform luma/chroma space for each hue angle but with arbitrarily chosen saturation and chroma. These colors can be converted to CIE chromaticity, corrected to lie on the edge of the gamut polygon, and then converted back to chroma/luma to get the maximum saturation values. To traverse the edges of the gamut, a color with each desired hue angle may be generated one after another. Color 202 in **Figure 2B** may represent a color constructed with one hue angle value but arbitrary luminosity. It may be converted to CIE xy space. By interpolating a straight line between color 202 and the white-point 210, it may be possible to find the intersection with the gamut at color 204. The intersection may lie on any of the lines connecting primary colors of the gamut. This interpolation process may succeed if point

202 is inside or outside the gamut. Color 204 may then be converted back into the uniform luma/chroma space, such as CIE Lab where the magnitude of the vector ab is the saturation. This saturation may then be stored as the maximum for that hue angle. The process may be repeated for all desired hue angles, as indicated by showing another color 206 generated with a different hue angle and the resulting gamut intersection point 208. Another way to traverse the gamuts and generate maximum saturation values would be to linearly step along the edges of the gamut polygons in CIE chromaticity space, convert a set of points to luma/chroma and calculate the hue angle of each. If the linear steps are small enough, several luma/chroma pairs could be generated for each hue angle. The average saturation of all the pairs for each angle could be used as the maximum saturation for that angle. Of course, other resulting saturation values – besides averaging – could be calculated from the multiplicity of chroma/luma pairs and used in the gamut conversion table. Color 204 in figure 2C represents a color linearly interpolated in CIE xy space between two of the primaries in a gamut. This color is converted to hue and saturation by, for example, converting to CIE Lab where the angle of the vector ab is the hue angle and the magnitude is the saturation. The hue angle is rounded to the nearest desired angle and the saturation becomes, or contributes to, the maximum saturation. Color 208 represents the next step in a linear interpolation along the line between two primaries. This color may also be converted to hue and saturation. If the hue of color 208 is close to the hue of color 204 then the two saturations may be averaged or combined as described before. If the hue angles are sufficiently far apart the saturation of color 204 will become, or contribute to, the maximum saturation of a different hue angle in the table. The process may continue

until points have been interpolated along all the lines connecting the outside of the gamut. Additionally, there are other ways of building a table of maximum saturation tables -- the above two algorithms are only two of many possible embodiments.